

Appl. No. : 10/817,200
Filed : March 31, 2004

AMENDMENTS TO THE CLAIMS

Please amend Claims 48, 64, 66, 67, 69, 72, and 73.

Please cancel Claims 68 and 71

1.- 47. (Canceled)

48. (Currently amended) A process chamber flow control system comprising:

a process chamber;

a substrate holder in the process chamber, the substrate holder including a supporting surface;

a first inlet leading directly into the process chamber, the first inlet being positioned at one side of the substrate holder;

an outlet defining positioned at an opposite side of the substrate holder from the first inlet, wherein the first inlet, the outlet, and the process chamber define a laminar flow path between the first inlet and the outlet, the laminar flow path extending across the supporting surface of the substrate holder;

a second inlet leading directly into the process chamber, the second inlet being positioned to open into the laminar flow path between the first inlet and the outlet substrate holder;

a channeling duct configured to channel a plasma generator product to the second inlet; and

an inlet insert located in the second inlet, the inlet insert being configured to disrupt a reactive flow flowing through the second inlet into the process chamber.

49. (Original) The system of Claim 48, further including a remote plasma generator configured to produce the plasma generator product.

50. (Original) The system of Claim 48, wherein the inlet insert is configured to disrupt the plasma generator product in order to control a flow geometry of the plasma generator product flowing into the process chamber.

51. (Previously presented) The system of Claim 50, wherein the inlet insert comprises a plate having at least one shaped opening selectively located therein in order to disrupt the

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plasma generator product flowing through the at least one shaped opening and issuing from the second inlet.

52. (Previously presented) The system of Claim 50, wherein the inlet insert comprises a plate having at least one flow blocking portion selectively located therein in order to disrupt the plasma generator product flowing around the at least one flow blocking portions and issuing from the second inlet.

53. (Previously presented) The system of Claim 48, wherein the inlet insert is configured to produce a uniform reactive flow geometry from the second inlet.

54. (Previously presented) The system of Claim 48, wherein the inlet insert is configured to produce a non-uniform reactive flow geometry from the second inlet.

55. (Previously presented) The system of Claim 48, wherein the second inlet further comprises:

a throat defining the portion of the second inlet where the reactive flow enters the second inlet; and

a mouth defining the portion of the second inlet through which the reactive flow exits the second inlet into the process chamber, the mouth having a greater circumference than the throat.

56. (Original) The system of Claim 55, wherein the inlet insert is located between the mouth and the throat.

57. (Original) The system of Claim 55, wherein the inlet insert is located in the mouth.

58. (Original) The system of Claim 57, wherein the mouth is configured to hold the inlet insert in a selectively removable position.

59. (Previously presented) The system of Claim 55, wherein the second inlet has a conical profile with side walls flaring outwardly from the throat to the mouth, the flared side walls having a support configured to hold the inlet insert in a selectively removable position.

60. (Canceled)

61. (Canceled)

62. (Canceled)

63. (Canceled)

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64. (Currently amended) An apparatus for use in a process chamber flow control system having a process chamber, an inlet leading to the process chamber, and a channeling duct configured to channel a reactive flow to the inlet, comprising:

an inlet plate configured to disrupt a reactive flow flowing through the inlet into the process chamber, the inlet plate comprising a plate of a substantially oval shape having an elongate axis, the plate comprising a flow blocking section and an opening, the opening having an elongate shape extending substantially along the elongate axis,

wherein the flow blocking section and the opening are together configured to alter a path of the reactive flow such that the reactive flow substantially widens and flattens as it issues from the inlet relative to a flow pattern from the inlet in the absence of an inlet plate.

65. (Canceled)

66. (Currently amended) The apparatus of Claim 64, wherein the flow blocking section and the opening are together configured to produce a substantially uniform reactive flow geometry substantially along the elongate axis.

67. (Currently amended) The apparatus of Claim 64, wherein the flow blocking section and the opening are together configured to produce a non-uniform reactive flow geometry substantially along the elongate axis.

68. (Canceled)

69. (Currently amended) The apparatus of Claim 64, wherein ~~the inlet plate has an elongate axis, wherein~~ the opening is positioned generally on one side of the elongate axis, and wherein the flow blocking section is positioned generally on the other side of the elongate axis.

70. (Previously presented) The apparatus of Claim 69, wherein the flow blocking section comprises a shallow recess generally in the center of the elongate axis.

71. (Canceled)

72. (Currently amended) The apparatus of Claim ~~71~~ 64, wherein the flow blocking section comprises protrusions which extend toward the elongate axis.

73. (Currently amended) The apparatus of Claim ~~71~~ 64, wherein the opening is wider in a dimension perpendicular to the elongate axis on its ~~its~~ the ends than on ~~its~~ the middle of the axis.